

REMARKS

Applicants appreciate the consideration shown by the Office as evidenced by the Office Action mailed on 08 January 2004. In that Office Action, the Examiner objected to informalities in the specification and rejected claims 1-33. In this Response, Applicants have amended claims 1, 10, and 32, and have cancelled claims 7-9 and 33. Applicants respectfully request favorable reconsideration in light of the above amendments and the following remarks.

1. Informalities in the specification

Applicants note that the Examiner maintained his objections due to the following informalities: 1) "comprisingfrom" in line 5 of a paragraph (Examiner's paragraph 0022) and 2) "andheat" in the same paragraph at line 13. Applicants have carefully reviewed their copy of the e-filed specification and believe that the previously submitted amendment to Applicants' paragraph 0026 addressed these informalities. There appears to be a discrepancy in paragraph and line numbers between Examiner's and Applicants' copies. Applicants respectfully request the objection be held in abeyance until the substantive issues in this case have been resolved.

2. Claim Rejections

Applicants have cancelled claims 7-9 and claim 33 and incorporated their limitations into claims 1 and 32. Thus, both independent claims 1 and 32 recite, among other things, "coating said substrate with a metal layer prior, said layer comprising at least one of platinum, palladium, nickel, and cobalt" and "heat treating said substrate to allow interdiffusion of material between said metal layer and said substrate." Support for the recitation of the heat treatment to allow for interdiffusion is found throughout the originally filed specification, for example in paragraph [0022].

As both independent claims now recite limitations previously found in claims 7-9 and claim 33, Applicants will specifically address only those rejections presented in the current Office Action that pertain to these claims. Applicants respectfully submit that the other combinations of references cited by the Examiner do not teach, suggest, or disclose the deposition of a metal layer and application of an interdiffusing heat treatment prior to

deposition of the protective layer, as recited in independent claims 1 and 33 of the present application.

Claims 7, 8, and 9, among others, were rejected under 35 USC 103(a) as being unpatentable over US 6,153,313 (Rigney) in view of US 2001/0012568 A1 (Bose) and US 6,207,297 (Sabol). The Examiner is relying on Sabol to provide a suggestion for Applicants' recited limitation of "coating said substrate with a metal layer, said layer comprising at least one of platinum, palladium, nickel, and cobalt," formerly in claims 7 and 8 and now recited in independent claim 1 of the present application. The Examiner further relies on Rigney to provide a suggestion for the heat treatment limitation formerly recited in claim 9 and now recited in claim 1.

Applicants respectfully traverse this rejection because the applied references teach away from the recitation of "coating said substrate with a metal layer, said layer comprising at least one of platinum, palladium, nickel, and cobalt;" and "heat treating said substrate to allow interdiffusion of material between said metal layer and said substrate." Sabol describes the use of intermetallic diffusion barrier layers to stop diffusion of material from the substrate. Col. 4, lines 42-45. Sabol thus stands in direct contradiction to the recitation in claim 1; where the point of depositing the layer is to allow the subsequent heat treatment to diffuse material from the layer and the substrate together. No one skilled in the art would be motivated to deposit the diffusion barrier layer of Sabol onto a substrate and then heat treat the substrate to cause diffusion between the layer and the substrate, because Sabol's diffusion barrier layer is designed to prevent migration of material from the substrate into a coating (col. 2, lines 65-67) whereas Applicants' invention recited in claim 1 is designed to diffuse the layer and the substrate together.

Because the combination of Rigney, Bose, and Sabol teach away from "coating said substrate with a metal layer, said layer comprising at least one of platinum, palladium, nickel, and cobalt;" and "heat treating said substrate to allow interdiffusion of material between said metal layer and said substrate," as recited in claim 1 of the present application, Applicants respectfully submit that claim 1 and its dependent claims are patentably distinct from the applied prior art.

Sabol was similarly used in the combination of references used by the Examiner to reject claim 33 (Rigney, Bose, Sabol, and US 4,109,061 (Beale)). Beale was applied to

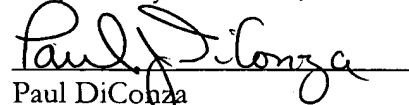
address the recitation of biasing the substrate and not to address deposition and diffusion of metal layers. Thus Sabol is used by the Examiner in the same way as above, namely to address the recitation of "coating said substrate with a metal layer, said layer comprising at least one of platinum, palladium, nickel, and cobalt." Applicants respectfully refer to their above arguments. Sabol's use of a diffusion barrier teaches away from Applicants' recitation of a heat treatment "to allow interdiffusion of material between said metal layer and said substrate." Thus Applicants respectfully submit that claim 32 is patentably distinct from the applied references.

4. Conclusion

In short, Applicants respectfully point out that, taken as a whole, the combination of Sabol with Rigney, Bose, and/or Beale teaches away from coating a substrate with a metal layer and heat treating the substrate to allow interdiffusion of material between the metal layer and the substrate. No fair reading of these references would suggest to one of ordinary skill in the art to use a process as recited in claims 1 and 32 of the present application to produce a protective coating. Applicants respectfully request reconsideration of the pending claims.

In light of the remarks and amendments presented herein, Applicants believe that this serves as a complete response to the subject Office Action. If, however, any issues remain unresolved, the Examiner is invited to telephone the undersigned at the number provided below.

Respectfully submitted,



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